WHAT IS CLAIMED IS:

1. A method for diagnosing cancer in a human subject comprising:

(a) obtaining a sample comprising cells of said subject;

(b) obtaining RNA transcripts from cells of said sample;

(c) performing quantitative PCR™ on said RNA using primers that amplify an AC133 nucleic acid segment; and

(d) comparing the amount of AC133 amplification product with the amount of amplification product in non-cancer cells,

wherein an increase in the amount of AC133 amplification product in cells of said subject, as compared to the amount of AC133 amplification product in non-cancer cells, indicates that said subject has cancer.

2. The method of claim 1, wherein said cancer is colorectal cancer, bladder cancer, ovarian cancer, testicular cancer, breast cancer, skin cancer, lung cancer, pancreatic cancer, stomach cancer, esophageal cancer, brain cancer, leukemia, liver cancer, endometrial cancer, prostate cancer, and head and neck cancer.

3. The method of claim 1, wherein said cancer is a non-epithelial cancer.

4. The method of claim 3, wherein said non-epithelial cancer is a bone sarcoma, a soft tissue sarcoma, or a gastrointestinal stromal tumor.

5. The method of claim 1, wherein said cells are mononuclear cells.

6. The method of claim 1, wherein said cells are isolated from a human subject previously diagnosed with cancer.

7. The method of claim 1, wherein said sample is blood from the peripheral circulatory system.

8. The method of claim 1, wherein forward said primer is composed of the DNA sequence: 5'-tgtacgaattcgacagctacttggctcagac-3' (SEQ ID NO:1).

9. The method of claim 1, wherein reverse said primer is composed of the DNA sequence: 5'-tctagctcgagcatgatctttatgataacc-3' (SEQ ID NO:2).

10. The method of claim 1, wherein said increase of AC133 amplification product further predicts tumor burden.

11. The method of claim 1, wherein said increase of AC133 amplification product further predicts tumor relapse.

12. The method of claim 1, further comprising making a treatment decision based on the increase in the amount of AC133 amplification product in cells of said subject.

13. The method of claim 1, further comprising treating said subject for cancer.

14. The method of claim 13, wherein said subject is treated with radiotherapy, immunotherapy, chemotherapy, hormonal therapy or gene therapy.

15. A method for quantifying endothelial progenitor cells in a sample comprising:

(a) obtaining a sample comprising cells of said subject;

(b) obtaining RNA transcripts from cells of said sample; and

(c) performing quantitative PCR using primers that amplify an AC133 nucleic acid segment,

wherein the amount of AC133 amplification product in cells of said sample, as compared to a standardized curve, estimates the total quantity of said endothelial progenitor cells in said sample.

16. The method of claim 15, wherein said standardized curve is derived from serial dilution of known quantities of said bone marrow-derived endothelial progenitor cells.

17. The method of claim 15, wherein accuracy of said method is 99%.

18. The method of claim 15, wherein the detection limit is one endothelial progenitor cell per one million cells.

19. A method for monitoring angiogenic activity in cells of a subject comprising:

(a) obtaining a sample comprising cells of said subject;

(b) obtaining RNA transcripts from cells of said sample;

(c) performing quantitative PCR™ using primers that amplify an AC133 nucleic acid segment; and

(d) assessing the amount of AC133 amplification product,

wherein the amount of AC133 amplification product in cells of said subject is an indicator of the angiogenic activity in cells of said subject.

20. The method of claim 19, wherein said sample is blood from the peripheral circulatory system.

21. The method of claim 20, further comprising assessing the amount of circulating endothelial cells.

22. The method of claim 21, further comprising assessing VEGF levels in said sample.

23. The method of claim 22, further comprising developing an angiogenic profile of said subject.

24. The method of claim 19, wherein said method is used to detect the presence of vascular injury, autoimmune disease, myocardial infarction or sepsis.

25. The method of claim 19, wherein said subject has previously been administered an anti-angiogenic therapy, and said assessing comprises assessing the efficacy of said anti-angiogenic therapy.

26. The method of claim 19, wherein forward said primer is composed of the DNA sequence: 5′-tgtacgaattcgacagctacttggctcagac-3′ (SEQ ID NO:1).

27. The method of claim 19, wherein reverse said primer is composed of the DNA sequence: 5′-tctagctcgagcatgatctttatgataacc-3′ (SEQ ID NO:2).

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